

WHAT IS CLAIMED:

1. An implant suitable for a condyle of a femur having a superior surface and an inferior surface wherein the superior surface opposes at least a portion of the condyle of the femur and the trochlea and the inferior surface opposes at least a portion of a weight bearing portion of a tibial surface and a patella and further wherein at least one of the superior or inferior surfaces has a three-dimensional shape that substantially matches the shape of one of the femur and tibia surfaces.
5
2. The implant of claim 1 wherein the superior surface and the inferior surface have a three dimensional shape that substantially matches the shape of at least one of the articular surface that the superior surface of the implant abuts and the inferior surface of the implant abuts.
10
3. The implant of claim 1 wherein the implant has a thickness of a cartilage defect in a patient.
4. The implant of claim 1 wherein the implant has a thickness of 85% of a cartilage defect in a patient.
15
5. The implant of claim 1 wherein the implant has a thickness of between 65%-100% of a cartilage defect of a patient.
6. The implant of claim 1 wherein the implant has a thickness of a cartilage defect plus a predefined offset value.
20
7. The implant of claim 6, wherein said offset value can be selected to adjust for axis malalignment.

8. The implant of claim 1 wherein the implant is constructed of a material comprising metal or metal alloy.

9. The implant of claim 1 wherein the material comprises one or more biologically active materials.

5 10. The implant of claim 6 wherein the implant is coated with a biologically active material.

11. The implant of claim 1 wherein the implant is comprised of a metal or metal alloy and a polymer.

10 12. The implant of claim 1 further having a structure for attachment on at least one of the superior surface and the inferior surface selected from the group consisting of: ridges, pegs, pins, cross-members, teeth and protrusions.

13. The implant of claim 12 further having a plurality of structures for attachment.

15 14. The implant of claim 13 wherein the relative orientation of the structures for attachment are selected from the group consisting of: symmetrical, asymmetrical, rows, circles, triangles, and random.

15. The implant of claim 1 wherein the implant covers a portion of a patellar surface of the femur.

20 16. The implant of claim 1 wherein each of the superior surface and inferior surface have a slope relative to a longitudinal axis through at least a portion of the implant and further wherein the slope of the superior surface

relative to the slope of the inferior surface is selected from the group consisting of: positive, negative, and null.

17. The implant of claim 1 wherein the implant approximates the shape of one of the first and second articular surface.

5 18. The implant of claim 1 wherein a condyle mating surface of the implant has at least one plane surface for mating with a prepared condyle having a chamfer cut.

19. The implant of claim 1 wherein the implant is selected from a library of implants.

10 20. The implant of claim 1 wherein the implant is surgically implanted via an incision of 10 cm or less.

21. The implant of claim 1 wherein the implant is surgically implanted via an incision of 6 cm or less.

15 22. The implant of claim 1 wherein the range of motion of the joint is restored to between 80-99.9% of normal joint motion.

23. The implant of claim 1 wherein the range of motion of the joint is restored to between 90-99.9% of normal joint motion.

24. The implant of claim 1 wherein the range of motion of the joint is restored to between 95-99.9% of normal joint motion.

20 25. The implant of claim 1 wherein the range of motion of the joint is restored to between 98-99.9% of normal joint motion.

26. The implant of claim 1 wherein the implant is formed to oppose at least a portion of a second condyle on the femur.

27. A kit for repairing a knee comprising one or more implants selected from the following:

- 5 a condylar implant having a superior surface and an inferior surface wherein the superior surface opposes at least a portion of a condyle of the femur and a trochlea and the inferior surface opposes at least a portion of a weight bearing portion of a tibial surface and a patella and further wherein at least one of the superior or inferior surfaces has a three-dimensional shape that substantially matches the shape of one of the femur and tibia surfaces;
- 10 a condylar implant having a superior surface and an inferior surface wherein the superior surface opposes at least a portion of a condyle of the femur and the inferior surface opposes at least a portion of a weight bearing portion of a tibial surface and further wherein at least one of the superior or inferior surfaces has a three-dimensional shape that substantially matches the shape of one of the femur and tibia surfaces;
- 15 a patellar implant having a first surface that engages the femur mating surface of the patella and a second surface that engages the trochlea; and
- 20 an implant suitable for the tibial plateau having a superior surface and an inferior surface wherein the superior surface opposes at least a portion of a femur and the inferior portion opposes at least a portion of the tibial surface and further wherein at least one of the
- 25

superior or inferior surfaces has a three-dimensional shape that substantially matches the shape of one of the femur and tibial surfaces.